

## WHAT IS CLAIMED IS:

1. A method of increasing the cellular expression of a gene in a biological tissue in an animal to treat a pathophysiological state of said animal, comprising the steps of:

delivering said gene to the animal to transfect said gene into the biological tissue, said gene expressed in the biological tissue under control of a promoter that does not have a glucocorticoid response element, wherein expression of said gene treats the pathophysiological state of the animal; and

administering to the animal a pharmacologically effective dose of a glucocorticoid in an amount sufficient to increase the cellular expression of said gene, wherein the increase in the expression of said gene in the biological tissue enhances the treatment of the pathophysiological state of the animal.

2. The method of claim 1, wherein said glucocorticoid is hydrocortisone, prednisone, prednisolone, triamcinolone, betamethasone, budesonide, flunisolide, or dexamethasone.

3. The method of claim 1, wherein said glucocorticoid is administered in a dose of about 0.1 mg/kg to about 50 mg/kg.

5 4. The method of claim 1, wherein said biological tissue is selected from the group consisting of liver, leukocytes, lung, gastrointestinal tract, kidney, skeletal muscle, smooth muscle, neurological tissue, skin cells, cancer cells, eye, bone marrow, and tumors.

10 5. The method of claim 1, wherein said glucocorticoid is soluble in lipids, ethanol or water.

15 6. The method of claim 1, wherein said gene is encapsulated in a liposome.

20 7. The method of claim 1, wherein said gene is dissolved in a solvent.

8. The method of claim 1, wherein said gene is delivered via injection, via oral administration, via skin absorption or via aerosol administration.

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9. The method of claim 1, wherein said glucocorticoid is administered concurrently with the delivery of said gene, prior to delivery of said gene or after delivery of said gene.

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10. The method of claim 1, wherein said animal is a human or a non-human animal.

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11. The method of claim 1, wherein said glucocorticoid is a synthetic glucocorticoid or a non-synthetic glucocorticoid.

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12. The method of claim 1, wherein said gene is transfected via viral transfection, via cationic lipid transfection or via targeted gene therapy utilizing a receptor and a cationic amine.

13. The method of claim 12, wherein said cationic amine is poly-L-lysine.

5 14. The method of claim 1, wherein said gene is a recombinant gene, a native gene, a cDNA, or an oligomer.

15 15. The method of claim 1, wherein said glucocorticoid enhances the expression and/or activity of said gene contained in a plasmid or viral vector.

16 16. The method of claim 1, wherein said glucocorticoid enhances the activity of said promoter.

17. A method of enhancing treatment of a pathophysiological state in a human by increasing cellular expression of a gene, comprising the steps of:

delivering said gene to said human to transfect a

biological tissue thereof, said gene expressed in the biological tissue under control of a promoter that does not have a glucocorticoid response element, wherein expression of said gene treats the pathophysiological state of said human; and

5           administering to said human a pharmacologically effective dose of a glucocorticoid in an amount sufficient to increase the cellular expression of said gene, wherein the increase in the expression of said gene in said biological tissue enhances the treatment of the pathophysiological state in said human.

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